

The Effect of Baby Massage Toward the Development of Three Months Baby

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ABSTRACT

WHO estimates that more than 20 million toddlers in developing countries fail to reach optimal development potential. The purpose of this study was to determine the effect of infant massage on the development of a 3-month-old baby. This study is a Quasi Experiment study with Pre and Post research design test Without Control Group Design. The sample in this study amounted to 32 people taken by accidental sampling technique. The instruments are The SOP of Baby Massage and KPSP. The results of the study showed that p value of 0,000 ($p < 0.05$), there is an effect of infant massage on the development of 3-month-old infants. It is expected that mothers who have 3-month-old babies can massage their babies at home 2 times a week for 15 minutes in order to optimize growth and development in babies while providing exclusive breastfeeding.

Keywords: *baby, massage, baby development*

1. INTRODUCTION

Every baby is a unique individual, because of hereditary factors and different environments. The achievement of their developmental abilities is also different but it still follows the general pattern of development. World Health Organization estimates that more than 20 million children under five years old in developing countries fail to reach their optimal development potential by 2020 due to problems of poverty, malnutrition or an unsupportive environment, affecting children's cognitive, motoric, emotional and social development [1].

Data on the incidence of developmental delay in general is certainly unknown, but it is estimated that around 1-3% of children under the age of 12 months experience general developmental delays. In 2017, around 35.4% of children under five in Indonesia experience developmental deviations such as gross motor aberrations, fine motor skills, and mental emotional deviations. In 2018, based on monitoring the growth and development status of infants, the prevalence of growth dropped to 23.1%. This is because Indonesia is making progress in maternal and child health programs [2].

The Tegal City Health Office in 2018 reported that the rate of delay in motor development in infants reached 1.058 cases or 0.6% of the number of infants, which included infants aged 3 months in the working area of the Penusupan District Health Centre. The results of the initial survey at

the district health centre in October 2018, obtained data on the number of infants aged 3 months as many as 58 people. Based on the infant visit, the developmental examination used Pre-Development Screening Questionnaire obtained and 9 infants (15.5%) experiencing irregularities or delays in the development of both gross and fine motoric [3].

Preliminary studies conducted by researchers at Tegal District Health Center on 10 infants aged 3 months who visited the maternal and child health clinic recorded 8 infants (80%) with normal development (appropriate) and 2 infants (20%) experiencing irregularities or delays in gross or fine motor development. This is indicated by the delay of the baby doing activities that should have been able to be done at that age, such as the baby cannot lift his head upright while lying on his stomach, the baby is also still experiencing delays in moving his head to follow the appraisal movement [3].

2. METHOD

This type of research was quantitative in the form of quasi experiment. The research design used Pre and Post-test without control group design. The population in this study were all infants aged 3 months in the work area of the Penusupan Health Centre of Pangkah District, in May 2019 with 47 babies. While the sample in this study amounted to 32 people with accidental sampling technique. The instruments are The SOP of Baby massage and KPSP [4].

Table 1 Development of 3-month-old babies before and after infant massage in Penusupan Health Centre, Tegal

Variable	N	Min	Max	Mean	Median	SD
The development of 3 months-old baby before massaging	32	7	8	7.56	8.00	0.504
The development of 3 months-old baby after massaging	32	8	10	9.44	10.00	0.759

3. RESULTS

Based on table 1, it is known that the lowest infant development score of 3 months before the massaging is 7 and the highest is 8 with a median mean of 8.00, the average development rate of the baby is 7.56 and the standard deviation or standard deviation is 0.504. The table is known that the lowest baby's development score of 3 months after doing baby massage is 8 and the highest is 10 with the average development rate of 3-month-old babies as 9.44, the middle value was 10.00 and the standard deviation was 0.759.

Table 2 Wilcoxon test of infant massage effect, June 2019 (n = 32)

Baby Development	Mean	p- value
Before massaging	7.56	
After massaging	9.44	0.000

The Wilcoxon test results obtained p-value of 0.000 < 0.05) so it can be concluded that there is an effect of baby massage on the development of 3-month-old infants in the Puskesmas District of Pangkah District Tegal District.

4. DISCUSSION

The development of infants aged 3 months before the baby massage based on the results of the study found that all respondents (100%) experienced dubious development with a development score between 7 to 8 and an average score of 7.56. In accordance with the theory which states that development (development) is an increase in ability (skill) in the structure and function of the body that is more complex in a pattern that orderly and predictable, as a result of the ripening process. Here concerns the process of differentiation of body cells, body tissues, organs and organ systems that develop so that each can fulfil its function. Including emotional development, intellectual and behaviour as a result of interaction with the environment [5].

This is consistent with research on the effectiveness of baby message and baby gym on the development of infants 3-6 months, with the result that the majority of infants before being given infant massage experience 46.3% development of doubt [6].

The development of a baby is a process of maturity both physically and mentally from a baby. Maturity or maturation is influenced by many factors since the baby is still in the womb both in terms of nutrition and genetics up to after the baby is born which includes nutrient intake, chronic diseases/ congenital disorders, physical and chemical environment, psychological, endocrine, socio-

economic, parenting environment, stimulation (baby massage) and medicine [6,7].

Babies can experience optimal development if they have a skin stimulation that provides a comfortable effect and improves the development of neurology so that the motor development is faster. The development of infants aged 3 months after the baby massage based on the results of the study found that most respondents experienced a corresponding or normal development as many as 27 people (84.4%) with 9 and 10 pre-development screening scores and 5 people who were still doubtful categories with pre-development screening scores. The lowest development is 8 and the highest is 10 with an average score of 9.44 [8].

In accordance with the theory which states that child growth from conception to adulthood is influenced by many factors, such as genetic factors and bio-physic psychosocial environmental factors, which can inhibit or optimize children's growth and development. Every parent will expect their children to grow and develop perfectly without experiencing certain obstacles. The pattern of normal growth and development between one child and another in the end is not always the same, because it is influenced by interactions by many factors [9].

The results found that after getting baby massage, the baby will interact with parents so that there will be closer to their parents. In addition, baby massage is a stimulus that is useful in training the muscles or physical baby so that it can improve the ability of gross and fine motor activity in infants. The interaction and communication that exists between mother and baby during the massage process will also train the social and communication skills and language of the baby. Baby massage that is carried out routinely twice a week for 15 minutes will increase the developmental ability of the baby.

The results of statistical analysis with the Wilcoxon test showed that after massage the baby had an increase in developmental scores in infants aged 3 months with a p-value of 0.000. The results of this study relate to the movement of infant massage on the back and head of the baby, the position of the baby in the stomach and massaged from the back neck to the buttocks which can stimulate the baby to raise his head upright 90°, rise head upright and sit head upright. The results of this research in accordance with previous research that baby massage can increase the development of one of the gross motors, namely the ability to lift the head in the position of the neck in the baby aged 3-4 months. Other research shows that there is an influence of massage effleurage towards gross motor in infants aged 3-4 months in the ability to lift the head and roll over [10,11].

Baby massage is a good stimulus in training baby's development. Baby massage done from head to foot allows for optimization of the metabolic system and physical and psychosocial abilities in infants. The stimulation given in the process of baby massage will improve the relationship between mother and baby, this will cause a sense of

relaxation and facilitate blood circulation in the baby's body so that the body's metabolic processes will be more optimal and support the development of the baby's development. The provision of baby massage can stimulate the growth and development of muscles and nerves in infants, as well as an increase in blood circulation by 10 – 15% After the massage is given [8].

Supported by the opinion that massage stimulation carried out in infants will stimulate the secretion of beta endorphin hormones. This hormone is a hormone that affects growth and development in infants. A study says that babies who routinely do touch therapy (massage) will tend to develop according to their age. Mother and baby response at the time of massage will make the baby learn with sign languages performed by the mother during the massage process. This interaction will form movement exercises and socialization and the ability of the baby to express the response given by the mother. This is the basis that massage in infants can stimulate development in infants [12].

Baby massage will make the activity of the nerve that inducing hormone absorption in insulin and gastrin, where insulin plays a role in the process of carbohydrate metabolism, glycogen storage, synthesis of fatty acids that are all stored in the liver, fats and muscles. One of the glycogens is to produce ATP (Adenosin Trifosfat) which is useful for muscle contraction. The availability of enough ATP in infants will make the baby more active so that it can accelerate its motor development process [13].

Baby Massage has the benefit of stimulating the hypothalamus to order pituitary secreting oxytocin hormones that have the effect of making the baby's body calm, comfortable and reduce the frequency of crying so that the quality of sleep becomes more comfortable and when waking up the concentration power will be fuller. Growing baby's age requires enough quality of baby sleep because sleep is essential to help baby's brain maturity [14,15].

The other baby massage benefits are increasing weight, making babies quieter, increasing the effectiveness of baby breaks (baby sleep)/improving sleep quality, improving growth, improving infant concentration, increasing breast milk production, helping relieve discomfort in the digestion and emotional distress, stimulating brain development and nervous system and motor development, improve digestive peristalsis, stimulating the activity of the gastrointestinal tract for respiratory repair, Strengthening the immune system, teaching early babies about body parts and increasing oxygen flow and nutrients to cells [11,16].

The results of this study are in line with previous studies about the effectiveness of baby massage with the technique of effleurage on the development of gross motoric in infants aged 3-4 months getting results for gross motor development to crawl, pull to sit and rolling in the experimental group more significantly compared with the control group. This study was conducted for 1 month, massage twice a week for 4 weeks by the therapist in the experimental group. The conclusion of the study is that giving massage to babies aged 3-4 months can influence and stimulate the process of growth and development of gross motoric on the ability to crawl, pull to sit & rolling [11].

5. CONCLUSION

There is the influence of infant massage on the development of 3-month-old babies in Penusupan Health Centre of Pangkah District, Tegal Regency with a p value of 0,000.

6. DIRECTIONS TO FUTURE RESEARCH

Mothers who have a 3-month-old baby are expected to be able to massage their baby at home as a stimulation of development by doing a baby massage twice a week for 15 minutes in order to optimize their growth and development while providing exclusive breastfeeding. For the next researcher, it is expected to be able to make the literature and examine the research methods and other variables that influence development.

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